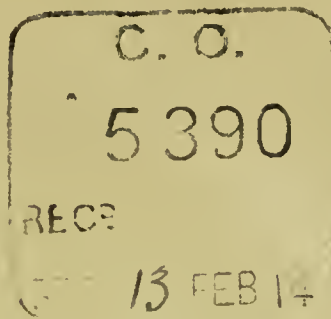


Enclosure to Mauritius Despatch N<sup>o</sup> 7 of 44<sup>th</sup> January 1914

24 Feb. 1914



Colony of Mauritius.

---

ANNUAL REPORT

ON THE

MEDICAL & HEALTH DEPARTMENT

FOR

1912.



MAURITIUS.

PRINTING OFFICE.

1913.

## CONTENTS.

---

	Page.
Chapter I.—Statistics of Population ... ..	1
„ II.—Meteorological Observations ... ..	1
„ III.—Prevalence of Sickness, &c. ... ..	2
„ IV.—Vaccination ... ..	6
„ V.—Sanitary Administration... ..	6
„ VI.—Hospitals and Asylums ... ..	6
„ VII.—Miscellaneous ... ..	6

---

## ANNEXURES.

- I.—Malaria and Rainfall Chart.
  - II.—Statistics of Population.
  - III.—Contagious Diseases—Deaths from.
  - IV.—Meteorological Return.
  - V.—Report on Sanitary Branch.
  - VI.—Report on Sanitary works.
-

COLONY OF MAURITIUS.

---

ANNUAL REPORT

ON THE

**Medical and Health Department**

**FOR 1912.**

---

I.—STATISTICS OF POPULATION.

Population. The civil population on December 31st. 1912, according to the Registrar General's report is estimated at 371,746, a reduction of 528 on the total for the previous year. This is due to a large increase in the number of deaths and a decrease in the number of births, and would have been much larger if the number of immigrants had not exceeded that of emigrants by 692.

Deaths. 14,429 people died during the year, an increase of 2,225 over the previous year, and is the highest recorded since 1908. The death-rate was 38.7 ‰. This increase is mostly due to an outbreak of whooping cough which carried off 1,064 persons, and to plague, which accounted for over 540. Measles was responsible for another 50 and an increase of about 230 deaths from malaria helped to swell the total. I annex a table giving the number of deaths due to communicable diseases (including malaria and malarial cachexia) showing that 6,708 persons died from these causes or nearly half of the number of deaths were due to them.

Births. 13,209 children were born, or 1,375 less than last year. Thus the number of deaths exceeded that of births by 1,220. This has occurred three times in the last five years, viz : in 1908, 1909 and 1912. The decrease in the population due to this fact amounts to 554 in five years.

Birth and death-rates. Given the above figures the birth-rate has fallen from per 1,000. 39.4 to 35.5 ‰, and the death-rate has risen from 33 to 38.7 ‰. Rivière du Rempart has the highest birth-rate—42.1 ‰—and Flacq the lowest, 32.2. Port Louis has the highest death-rate, 56.5, and Plaines Wilhems the lowest, 31.2.

Causes of death. The following diseases are accountable for the majority of the deaths : Malarial fever and cachexia, 4,619, pneumonia, 1,426, whooping cough, 1,064, tuberculosis, 1,000, plague, 543, influenza, 383. These six diseases caused a total of 9,035 out of the 14,429 during the year. Both pneumonia and tuberculosis show a decided increase over last year's figures, and as long as the present overcrowded condition of the houses inhabited by the labouring classes, both indian and creole, in the towns or in the country, is allowed to continue, not much improvement in this direction may be expected.

II.—METEOROLOGICAL STATISTICS.

Through the courtesy of the Director of the Royal Alfred Observatory I am able to give the following statistics. I give the figures for 1910 and 1911 also for comparison. As regards temperature the year was a cool one. The rainfall was very high, but seeing that 31.51 inches of rain fell in one month (February) the whole year cannot be regarded as a very wet one.



	Solar max.	Solar min.	Shade max.	Shade min.	Rain.
1910...	168.4	45.1	90.2	53.6	38.79
1911...	150.6	54.1	87.5	61.8	46.28
1912...	150.3	56.2	87.4	61.4	72.96

### III.—PREVALENCE OF SICKNESS, &c.

The hospital returns are taken for the basis of this part of the report. They are more reliable than those of the Civil Status. The number of patients admitted to the various hospitals and asylums during the year was 18,641, compared with 18,074 in 1911, together with 5,891 out-patients of whom 67,578 attended the various dispensaries not attached to hospitals.

**Malaria and Hypertrophy of the spleen** :—3,063 cases with 43 deaths were recorded, an increase of 946 over last year; the death-rate also was higher, viz : 1.4 % against .89. This increase is due to the deluge of February and is concentrated in the months of March, April and May. The drop in the number of cases in the later months of the year showed that the disease diminished as soon as the pools caused by this downpour dried up.

The following figures show the number of admissions for the last 10 years :—

Years.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Admissions ...	4,788	3,039	5,123	3,674	4,272	5,071	3,929	2,338	2,117	3,063

**Dysentery** :—618 cases with 97 deaths ; an increase in the number of cases of 52, in comparison with 1911, and a death-rate of 14.2 instead of 12.54 %.

**Enteric fever** :—48 cases, 13 deaths ; a high death-rate of 27.08 %. The number of cases notified for the whole Island was 189 with 37 deaths, giving a general death-rate of 19.05 per hundred cases.

The following Table shows the distribution of the disease in the various districts :—

*Cases of Enteric fever notified in 1912.*

Districts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Port Louis ...	2	1	8	4	1	4	...	...	2	4	3	3	32
Pamplemousses ...	...	...	2	1	1	...	1	...	...	1	1	...	7
Rivière du Rempart ...	3	1	2	6	6	...	...	1	3	1	2	4	29
Flacq ...	...	...	1	...	1	...	...	...	...	1	2	1	6
Grand Port ...	2	2	...	...	...	1	...	...	...	4	7	4	20
Savanne ...	...	1	...	1	1	1	4	1	...	...	1	1	11
Black River ...	...	...	...	...	...	...	...	...	...	...	...	2	2
Plaines Wilhems ...	4	2	6	10	8	7	6	6	6	3	6	7	71
Moka ...	1	1	...	1	...	1	1	4	2	...	...	...	11
Total ...	12	8	19	23	18	14	12	12	13	14	22	22	189

There is not much difference between the totals for the two years, but Rivière du Rempart and Grand Port show an increase, whilst Port Louis, though still second on the list, shows a substantial decrease.

**Diphtheria** :—Only 4 cases were treated at the hospitals with one death. The number in the Island was 19 with a mortality of 4.

**Influenza** :—1,588 cases with 68 deaths, against 1,610 cases in 1911.

**Pneumonia** :—Fewer cases were treated at the hospitals this year, but, as I said above, there was a great increase in the total number of fatal cases all over the Island. This disease is most common here among the Indian population and its spread is due to the overcrowding that goes on in the ill-ventilated huts occupied by this portion of the population.

**Tuberculosis** :—958 cases were treated in the hospitals with 238 deaths. This disease by itself caused 1,000 deaths during the year. Overcrowding and insanitary surroundings have much to do with its propagation.

**Cerebro-spinal meningitis** :—Five cases and four deaths are recorded in the hospital returns. Three other deaths were recorded outside.

**Beri-beri** :—Only three cases were treated at the hospitals with no death. One death occurring outside the hospitals appears in the Registrar General's return for the year.

**Nephritis** :—There was a slight decrease in the number treated. The figures fell from 631 in 1911 to 544 in 1912.

**Syphilis** :—The continued prevalence of this disease may be judged from the fact that 29 people were treated for it at the dispensaries, 601 as hospital out-patients, and 614 as in-patients, giving a total of 1,244 cases treated; of these 426 were for primary infection. These figures only apply to that part of the population that is unable (or unwilling) to pay for medical advice. They do not represent the total amount of syphilis in the Colony.

**Leprosy** :—There were 95 lepers in the St. Lazare Asylum on December 31st. 1911. 29 new cases were admitted, 20 died and 12 were discharged during 1912, making a total of 124 treated, and leaving a balance of 92 at the end of 1912.

**Erysipelas** :—42 cases with one death were treated in the hospitals during the year, a further reduction on last year's figures of 9.

**Measles** :—50 cases were treated in the hospitals during the year. None of them were fatal. There was a severe outbreak beginning in September and lasting to the end of the year among the general population, which caused 49 deaths.

**Scarlet fever** :—None reported.

**Mental diseases** :—437 persons (271 males and 166 females) were under treatment at the Lunatic Asylum on December 31st. 1912; and there were 100 harmless imbeciles (70 males and 30 females) in the Branch wards at the Beau Bassin pauper asylum, making a total of 537 compared with 556 on the same date for 1911. The daily average was 441.19 in the Asylum and 96.7 in the Branch wards. There were 29 criminal lunatics—24 males and 5 females—4 more than in 1911. 8 cases were discharged under special conditions. 88 men and 43 women were admitted during the year. Of these 83 were admitted for the first time, 9 for the second, 1 for the third, and 29 were re-admissions from probation leave. 6 were admitted on interim orders and subsequently found not to be insane. In 99 cases the origin of the trouble was diagnosed and found as usual to be due to either heredity, excesses, or in a few cases to the weakness left after prolonged malarial infection.

117 patients were discharged (68 males and 49 females), 46 more than in 1911. 8 of these were discharged finally and 96 on probation, whilst 13 imbeciles were transferred to the Barkly Asylum.

Confined in the Asylum and out on probation there are 668 lunatics registered on the list giving a ratio of 1 to 556 or 17.9 per 10,000, an increase of .2 per 10,000 compared with 1911.

The insane rate is on the increase both among the general population and the Indians. The figures for this year are: general population, 3.068 ‰ and Indians 1.209 ‰.

**Whooping cough** :—Re-introduced in the Colony in August, this disease rapidly assumed an epidemic form and spread all over the Island, causing death in 1,064 cases or nearly twice the number due to plague. It was no respecter of persons, for a medical man of 59 had a very severe attack from which I am glad to say he recovered. But by far the larger proportion of



cases occurred amongst children and the fatal cases, as may be expected, were practically confined to the Indian and coloured part of the population.

**Plague** :—This disease returned in a much severer form this year, there having been 656 cases with 541 deaths, giving a high mortality of 82.5 o/o. This year's epidemic may be considered as a prolongation of the one in 1911, as the Colony has never been more than 14 days without a case of plague since September 30th. 1911. Cases kept on cropping up here and there every few days until the middle of July 1912, when they got more numerous. In August the disease may be said to have taken on an epidemic form which reached its highest point towards the end of November and then rapidly abated.

44 cases of pneumonic plague were registered during the year and they were all fatal. They occurred mostly as single cases in Port Louis; but there was what threatened to be a severe outbreak on the "Côte d'Or" Estate in the Moka district in March, 16 cases, all fatal, occurring in 15 days. The unfortunate dresser of the Estate hospital, his wife and his three daughters all died within two days. Thanks to the energetic steps taken by Dr. Milne, the Sanitary Warden, the disease did not spread beyond the camp in which it broke out, and he deserves great credit for the work he did there, as it was entirely owing to his exertions, backed up by those of the Manager of the estate, that the outbreak was kept within limits.

*Race incidence* :—242 cases occurred amongst the general population, 387 amongst the Indians, and 27 amongst the Chinese. From these figures and working from the 1911 census, the race incidence per 1,000 works out as follows :—Chinese 7.37 o/o, General population 2.25, Indians 1.11, showing that here as elsewhere the Chinaman appears to be more liable to contract plague, and his high death-rate of 88.9 o/o shows that he is less able than other people to resist it when attacked. The low rate among the Indians is not due to any special immunity, but to the fact that they live chiefly on estates and in the country and not so much in town. Those on estates escape because they are to a certain extent under supervision, and those in the country escape because they do not live in contaminated areas.

<i>Sex</i> .—Males	...	57.2 o/o	Death-rate	...	81.1 o/o
Females	...	42.8 o/o	"	...	83.6 o/o

*Age* :—Children up to about 5 years of age are rarely attacked and the death-rate among them is low, about 74 o/o. From 5 to 30 the number of cases gradually increases and so does the death-rate. After 40 the liability to be attacked diminishes, but the prospect of recovery also becomes less, and after 60 few if any cases recover. As Dr. Keisler says in his interesting report, this age incidence may be accounted for by the fact that the population of a country is denser between the ages of 5 and 30 than in that from 30 to 80.

The following Table gives the number of cases of plague and the number of deaths caused by the disease since its outbreak in the Colony :—

Year.	No. of cases.	No. of deaths.	Death-rate.
1899	1,416	1,117	78.9 o/o
1900	796	593	74.5
1901	1,093	805	73.7
1902	506	384	76.3
1903	1,395	1,035	74.2
1904	568	449	79.0
1905	308	251	81.5
1906	434	344	79.3
1907	224	178	79.5
1908	167	137	82.0
1909	457	333	72.9
1910	731	553	75.6
1911	173	131	75.7
1912	656	541	82.5

240 of the fatal cases were discovered after death, and it is to this fact that the difficulty of eradicating the disease is largely due. The notification of death to this office is put off to the last minute so as to allow the wake and the gathering of relatives and friends round the body to take place, and incidentally to permit of the removal of plague-infected mattresses and clothes to save them from being disinfected. The relatives then fulfil the requirements of the law by declaring the death and when the medical referee arrives he finds the body lying in an empty room and watched by one or two persons, who express astonishment when they are told that the diseased died from plague.

*Type of disease* :—The bubonic form was the most common, comprising 515 of the total number. Of the rest 44 pneumonic and 7 septicæmic cases were fatal, and 25 out of 27 abubonic patients died. It is the large number of these very fatal types of the disease that is responsible for the very high death-rate for plague this year.

*Disinfection, &c* :—2,959 premises were disinfected. They contained 47,328 rooms, cellars and privies, nearly double the figures for 1911. 2,700 rodents were discovered dead or were destroyed during disinfection in Port Louis. 91,143 of these pests were destroyed during the year. Of these 38 were brought in by private parties, the rest being caught or poisoned by our rat-catchers. Experiments were tried with the virus of a rat disease prepared by Dr. Barbeau at the Bacteriological Laboratory. The results appear to be good, as, though we do not find many dead animals lying about, the number of rats caught when this virus has been distributed has considerably decreased. That rats were badly infected may be gathered from the fact that 4 o/o of the rats and mice examined microscopically were found infected. The figures for the previous year were .55 o/o.

*Lazarets and treatment* :—197 patients were treated in Government establishments. The other cases either died before they were found or were treated at home. 147 of these were treated at the Grand River Lazaret and 91 of them died giving a gross death-rate of 61.9 o/o. If we deduct from this total the 32 hopeless cases that died within 24 hours of admission, we get a death-rate of 51.3 o/o. 36 patients with a mortality of 72.2 o/o were treated in the Civil Hospital.

46 patients were treated with colloidal metals at the Lazaret. Electro argol seems to give the best results. Only bad cases were treated in this way, but the treatment will be extended this year. The following are the results with the three metals tried : Electro argol 55.5 o/o, electro platinol 64.2 o/o, electro aurol 78.2 o/o. In all cases the drug was injected intravenously.

Yersin's serum was injected intravenously in nine cases. They all died.

*Inoculation (prevention)* :—During an outbreak on the "Beau Séjour" Estate in Rivière du Rempart in May, 414 persons were injected with Haffkine's Prophylactic. Three of these caught the disease and died within 15 days. The total number of cases on this estate was 13 with 10 deaths.

The value of evacuation of infected dwellings as a means of stopping an outbreak is well shown in the rapid arrest of the apparently severe ones at Beau Séjour and Côte d'Or mentioned above. As a contrast I can mention another estate which was attacked in November. The evacuation of the infected camps was delayed by the Manager against the advice of the Sanitary Warden and the disease clung to the estate until the middle of February, attacking 42 persons and killing 30 of them. It was only finally stamped out when the infected camp was abandoned and destroyed.

The report of Dr. Keisler, Sanitary Warden for Port Louis and Officer in charge of Plague work, is very complete and has been prepared with great care, and I am indebted to him for the information given above.

1912 must be regarded as an unsatisfactory year from the point of view of Public Health. The increase in the number of deaths from plague, malaria, phthisis and pneumonia and the loss of over 1,000 children from whooping cough raised the death-rate to 38.5 o/oo, and the decrease in the number of births caused the birth-rate to fall, and the result has been decrease in the population. The high death-rate cannot be attributed to plague, as that disease, though very fatal, only caused 541 of the 14,400 deaths during the year. The insanitary condition of the Island is almost entirely due to the overcrowding not only in Port Louis (death-rate 56.5 o/oo) but all over the Island, all the premises inhabited by the poorer classes being built just large enough to comply



with the Building Regulations and each room let to a family no matter how many persons it is composed of.

#### IV. VACCINATION.

10,931 children were vaccinated out of the 13,209 born, a decrease of 369 in comparison with 1911. In 10,704 of these the vaccination was successful, leaving a balance of 2,505 children not vaccinated. My remarks on this subject in my report for 1911 apply equally well to 1912.

#### V.—SANITARY ADMINISTRATION.

Annexures V and VI deal with this subject.

#### VI.—HOSPITALS AND ASYLUMS.

The following Table gives a summary of the work done at these establishments during 1912 :—

*Work done in the Public Hospitals and Asylums in 1912.*

Hospitals.	Remaining at end of 1911.	Fresh cases.		Deaths.	Total cases treated.	Remaining at end of 1912.	Number of beds.
		In-door.	Out-door.				
Civil Hospital ...	156	5,738	246	429	6,140	150	271
Port Louis Prisons...	9	655	1,395	4	2,059	8	25
Long Mountain ...	22	835	21	60	878	14	41
Poudre d'Or ...	18	1,435	12	77	1,465	24	68
Flaeq ...	26	1,432	109	88	1,567	22	82
Flaeq Prisons ...	4	73	243	2	320	...	6
Mahebourg ...	37	1,639	*	116	1,676	26	102
Souillac ...	28	1,107	185	78	1,320	33	78
Souillae Prisons ...	2	294	574	1	870	3	8
Barkly Asylum ...	92	3,082	107	225	3,281	83	215
Lunatic Asylum ...	31	483	...	33	514	17	30
Beau Bassin Prisons	19	445	2,633	17	3,097	8	49
Reformatory ...	...	144	55	2	199	2	10
Moka ...	14	821	311	40	1,146	18	54
Total ...	458	18,183	5,891	1,172	24,532	408	1,039

\* The number of out-door cases treated at Mahebourg Hospital are not available.

#### VII.—MISCELLANEOUS.

**Port and Quarantine :—**193 ships were boarded during the year, 146 were at once admitted to pratique, and of the remainder 22 (French mail steamers) refused pratique on account of the plague, 6 were detained in quarantine as suspected vessels to complete their period of quarantine. The remainder were placed in quarantine for disinfection.

The Quarantine Committee was summoned 6 times. Only on two occasions was there a quorum.

The Disinfecting Station was in use throughout the year.

**Laboratory work—Chemical :—**The Government Analyst reports that he made 53 medico-legal analyses during the year, and 90 for the medical and other persons. The total number of articles examined and reported upon was 457, an increase of 12 over the number dealt with in 1911. He attended Court on 76 occasions, or 18 times more often than the year before. His work has been somewhat lightened as he has been provided with a servant to help him in the laboratory, and he has not now to clean his own apparatus.

31 samples of milk were analysed; of these six were found to have been watered, 15 skimmed, and 2 skimmed and watered. The adulteration with water in some cases was found to be 60 o/o, and by skimming the milk was weakened in one case by 75 o/o.



**Bacteriological Laboratory** :—Mr. Maya, the Assistant Director, remained in charge of this institution until September, when Dr. Barbeau returned from England. The usual routine work was carried on. Widal's and Wasseman's reactions were carried out 358 and 52 times respectively, and the usual bacteriological work was done to confirm the diagnosis in cases of plague, tubercle, pneumonia, diphtheria, cerebro-spinal meningitis, &c. Milk and water were examined ; in two cases the values of antiseptics were tested.

For the Veterinary department 2,337 samples of blood were examined for surra, 70 for piroplasmiasis, 12 for filariasis, 6 for chicken cholera, and the blood of 256 rats was dealt with.

329 post-mortem examinations were performed and 21 animals were treated for surra.

**Departmental changes, &c.** :—In April Dr. H. M. Sauzier went to Rodrigues to relieve Dr. Camal Boudou. The latter came to Mauritius and was appointed Government Medical Officer for the District of Pamplemousses, thus replacing Dr. Crétin, who took Dr. Sauzier's post of Port Health Officer and Assistant Government Medical Officer, Port Louis. No other changes took place until Dr. Barbeau's return from leave in September, and his resumption of duties as Assistant Director. This necessitated another change. Dr. S. A. R. Monty, Police and Prison Surgeon, was retired on pension and his place was taken by Dr. Crétin ; Dr. Crétin was replaced by Dr. Masson, who had been acting as Sanitary Warden, Port Louis. Dr. Keisler, Sanitary Warden for Black River, Savanne and Grand Port replaced Dr. Masson in Port Louis, Dr. Milne, Sanitary Warden for Moka, Flacq and the Northern Districts took Dr. Keisler's place, and Dr. Momplé, who had been acting as Assistant Director, resumed his post of Sanitary Warden vacated by Dr. Milne.

Another important change was made in the abolition of the post of Medical Inspector of Immigrants. Dr. Bolton retired on pension and his work has been divided among the Sanitary Wardens. The change took place at the end of the financial year 1911-1912, and apparently has worked well.

Between September 1911 and December 1912 the Medical Staff has been reduced by the abolition of the posts of Plague Authority and that of Medical Inspector of Immigrants, and by the combination of the two posts of Assistant Government Medical Officer, Port Louis, and that of Port Health Officer into one.

These changes, together with a recrudescence of plague has made the the working of the department a little difficult especially to a comparatively new comer, but the willing assistance of those concerned has minimised this difficulty and I take this opportunity of thanking those officers who have had additional work thrown upon them by this reduction of staff for the cheerful manner in which they have taken up their new responsibilities.

R. DENMAN,

30th. September, 1913.

Director, Medical and Health Department.

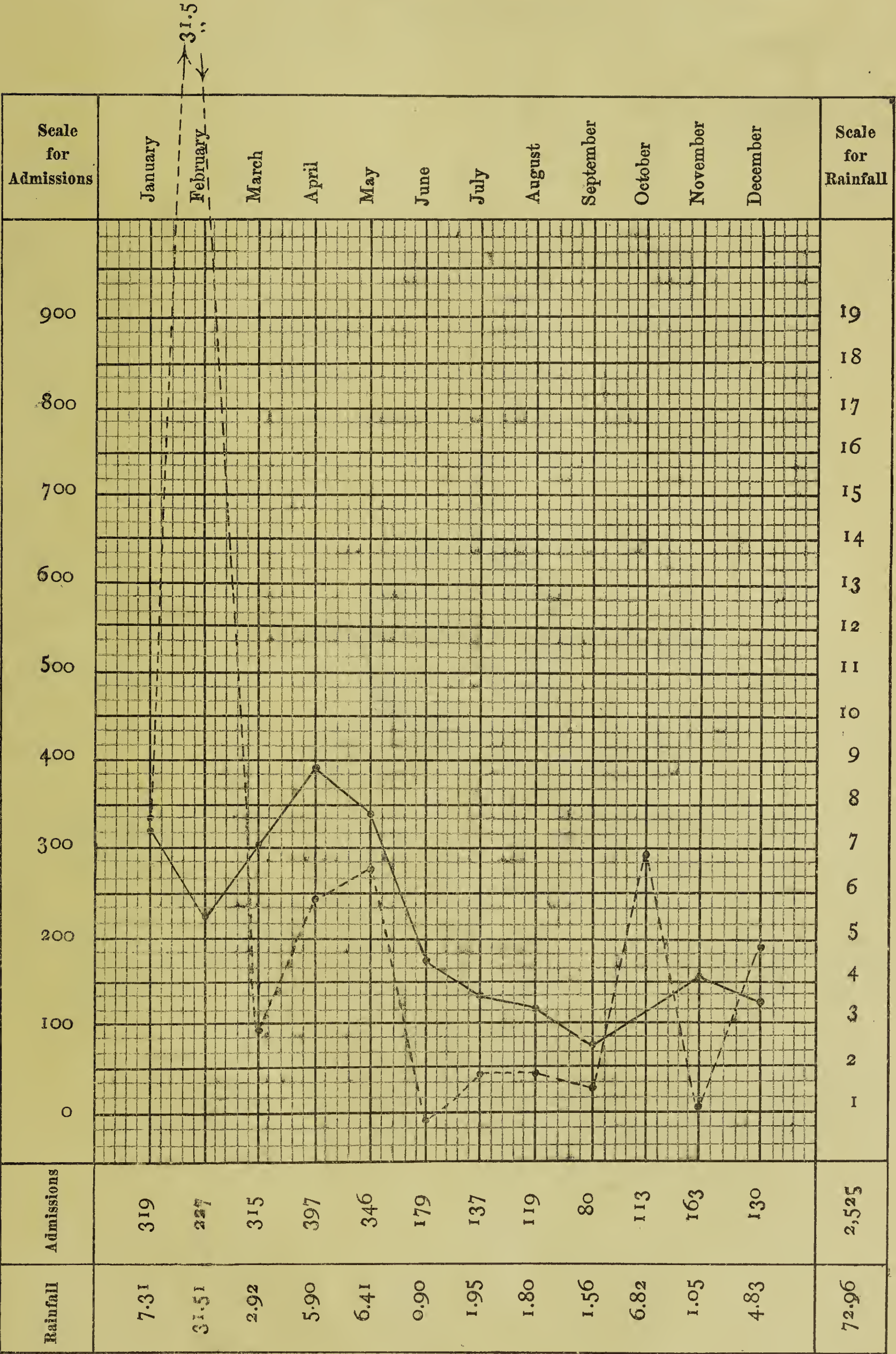
---





ANNEXURE I.

Chart showing Monthly Rainfall and Admissions at the Public Hospitals and Asylums for Malaria during 1912.



Admissions = \_\_\_\_\_  
Rainfall = \_\_\_\_\_

TOTAL FOR  
THE YEAR





## ANNEXURE II.

RETURN OF THE STATISTICS OF POPULATION  
FOR THE YEAR 1912.

	Europeans, whites, mixed and coloured.	Africans.	Indians.	Chinese.	TOTAL.
Number of Inhabitants on 31.12.11.	106,951	2,252	258,541	4,530	372,274
„ Births during 1912...	3,586	...	9,497	126	13,209
„ Deaths „ „ ...	4,383	18	9,924	104	14,429
„ Immigrants „ „ ...	3,118	...	979	1,770	5,867
„ Emigrants „ „ ...	2,963	...	1,362	850	5,175
„ Inhabitants on 31.12.12.	106,309	2,234	257,731	5,472	371,746

## ANNEXURE III.

## DEATHS DUE TO CONTAGIOUS DISEASES.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Plague ... ..	16	9	36	11	17	5	8	35	64	99	143	98	541
Typhoid Fever ... ..	2	3	4	3	3	1	5	...	4	3	7	2	37
Influenza ... ..	89	37	15	17	17	18	43	41	29	28	16	33	383
Malarial Fever ... ..	462	363	413	457	478	443	328	279	275	257	369	404	4,528
„ Cachexia ... ..	6	3	2	14	5	10	16	10	4	8	11	4	93
Diphtheria ... ..	...	1	...	...	...	...	...	1	...	...	...	...	2
Cerebro-Spinal Meningitis...	...	1	...	...	...	...	...	...	...	1	...	1	3
Whooping Cough ... ..	...	...	1	...	...	...	...	3	43	167	365	485	1,064
Erysypelas ... ..	1	1	...	1	1	...	1	1	...	...	1	...	7
Measles ... ..	...	...	...	...	...	...	...	...	1	4	12	32	49
Beri-beri ... ..	...	...	...	...	...	...	...	...	...	1	...	...	1
Total ... ..	576	418	471	503	521	477	401	370	420	568	924	1,059	6,708

## ANNEXURE VI.

*Notes on work done by the Sanitary Engineer's Branch during 1912.*

## DRAINAGE WORKS.

*Extra urban area of Port Louis* :—The camp Nattoo drain already mentioned in previous report was continued ; 1,044 feet were constructed during the year.

In the *Rural* districts the following drains were also constructed :—

(400) Four hundred feet at Centre of Flacq.

(410) Four hundred and ten feet at Souillac.

(321) Three hundred and twenty-one in Mahebourg.

The object of these drains was to carry away refuse as well as surface waters which by their stagnation saturated the soil with filth and provided breeding ground for mosquitoes.

## ANTI-MALARIAL WORKS.

These were undertaken on a somewhat large scale in the District of Pamplémousses. On The Mount Estate, there was a marsh of several acres, caused by a dyke having been built across the Pamplémousses River, from which the factory drew its water supply. The dyke was removed, and a deviation canal with an intake higher up the stream was built to feed the factory. The marsh was then drained by means of a central trench, cleared of rushes and aquatic vegetation and is now being cultivated.

On the same estate as well as on the one above the river, the Pamplémousses River had no proper bed with the result that along its course aquatic vegetation and marshes existed. A proper bed large enough for flood waters and deep enough to dry the banks where thick vegetation existed, has been provided. Three thousand feet of marshy jungle is being done away with and will soon be under cultivation.

Work of a similar nature is being done along the same river and will be reported upon later on.

At *Terre Rouge*.—Two hundred feet of a stream had to be canalized and a masonry channel 5 feet wide built in order to do away with putrid water stagnation. These works have also been continued during the present year and will be mentioned later.

At *Long Mountain*, an extensive marsh existed along the Ruisseau Meunier known as "Sanassee" marsh. This was drained by sinking the stream bed running through it ; and as no proper bed existed either up or down stream on a total length of two thousand five hundred feet causing marshes all along, the sinking of the bed was also carried out there.

At *Flacq*, twelve hundred feet of solid rock had to be blasted at a depth of 10 feet below surrounding ground to provide an outfall for the Centre of Flacq marsh. The rock being fused lava was especially hard to deal with and five thousand dynamite cartridges had to be employed during the operation.

At *Rose Belle*, the Ruisseau Sec was canalised by means of a central concrete channel, 2 feet wide by 3 feet deep on a length of seven hundred and fifty feet to provide for the moderate flood waters which used to stagnate and cause a most objectionable nuisance.

As the stream is torrential and carries stones in stormy weather, the channel had to be built specially strong with its sides well let in firm ground or rock.

Minor repairs were done to the abattoirs, markets, cemetery buildings and latrines in the country districts. At Curepipe those done to the market were rather extensive ; the whole of the flooring, which consisted of badly laid stone blocks, was raised and replaced by a new concrete flooring properly graded so as to allow of liberal flushing.

The total number of permits issued during the year for new constructions as well as repairs was 1,331. This number falls short of those obtained in previous years, a result which can without doubt be attributed to the suppression of one Building Inspector.

J. Loïs NAZ,

29th. September, 1913.

Sanitary Engineer.